

M.V. "KINAI MARU".

Nagasaki Report No. 1787.

CONSTRUCTION PROFILE
& DECK PLAN
SCALE 1/4 INCH TO 1 FOOT
(445-0x60-6x40-9)
(FINISHED PLAN)



Yokohama
June 14th 1987



LLOYD'S CLASS 100 A. 1" WITH FREEBOARD.

NB. ALL SECTIONS USED THROUGHOUT THE SHIP ARE
REVISED BRITISH STANDARD SECTIONS.

| PRINCIPAL DIMENSIONS | | | |
|-----------------------------------|-----|--------|--|
| LENGTH | (L) | 445'0" | |
| BREADTH MOULDED | (B) | 60'6" | |
| DEPTH TO UPPER DECK | | 10'3" | |
| LOADED DRAUGHT (FROM TOP OF KEEL) | | 26'03" | |
| DEPTH 'D' FOR SCANTLING NUMERALS | (D) | 40'75" | |

| SCANTLING NUMERALS | | | |
|--------------------------------------|-------|----------------------|--|
| 1 st LONGITUDINAL NUMERAL | (L/D) | 445'0/40'75" = 10.92 | |
| 2 nd LONGITUDINAL NUMERAL | (L/B) | 445'0/60'6" = 7.34 | |
| PROPORTION TO UPPER DECK | | 445'0/40'75" = 10.92 | |

| EQUIPMENTS & EQUIPMENT NUMBER | | | |
|-------------------------------|-------|--|--|
| EQUIPMENT NUMBER | 46196 | | |
| LETTER | d | | |

| EQUIPMENTS | | | |
|--------------------------------------|---------|------------------------|--|
| 3-BOWER ANCHORS STOCKLESS COLLECTIVE | 232 | | |
| STREAM ANCHOR ORDINARY EX. STOCK | 233 | | |
| STUD CHAIN CABLE | 300 FMS | 2 1/2" DIA. | |
| STEEL WIRE FOR STREAM ANCHOR | 120 | 4 1/2" CIR. (24 WIRES) | |
| TOW LINE STEEL WIRE | 130 | 5 1/2" CIR. (DE) | |
| HAWSER MANILA | 2-100 | 8" CIR. | |
| WARPS | 2-100 | 8" CIR. | |

| FORGING & CASTING | | | |
|--------------------------|--|------------------|--|
| STEM (ROLLED MILD STEEL) | | 10 1/2" x 2 1/2" | |
| STERN FRAME AS PER PLAN | | | |

| KEEL & SHELL PLATING | | | |
|----------------------|----------------------------------|--------------|--|
| KEEL PLATE | | 55 x 85 ~ 75 | |
| BOTTOM | | 67 ~ 52 | |
| SIDE | | 65 ~ 49 | |
| BOSS | | 75 | |
| FILE SIDE PLATE | | 44 | |
| SHEER STRAKE | 65 x 78 (RULE SIZE 52 x 74) ~ 49 | | |
| BELOW SHEER STRAKE | 65 (RULE SIZE 52 x 70) ~ 49 | | |

| ENGINE CASING | | | |
|---------------|--|--------------------------------|--|
| COAMING PLATE | | 30 x 34 WHERE EXPOSED | |
| CASING | | 25 x 30 | |
| COAMING ANGLE | | 3 x 3 x 30A 3 x 3 x 34A | |
| STIFFENERS | | 3 x 2 x 30A 3 x 3 SPACED APART | |

| DECK HOUSES | | | |
|---------------|------------------------|-----------------|---------------------|
| | UPPER DECK | BRIDGE DECK | BOAT DECK |
| COAMING PLATE | 30 | 28 | 25 |
| HOUSE PLATE | 25 | 25 | 25 |
| COAMING ANGLE | 6 x 3 x 32A | 6 x 3 x 32A | 6 x 3 x 32A |
| TOP | 3 x 3 x 30A | 3 x 3 x 28A | 2 1/2 x 2 1/2 x 25A |
| STIFFENERS | 3 1/2 x 2 1/2 x 32A | 3 x 2 1/2 x 30A | 3 x 2 1/2 x 25A |
| SPACING | SPACED ABOUT 33" APART | | |

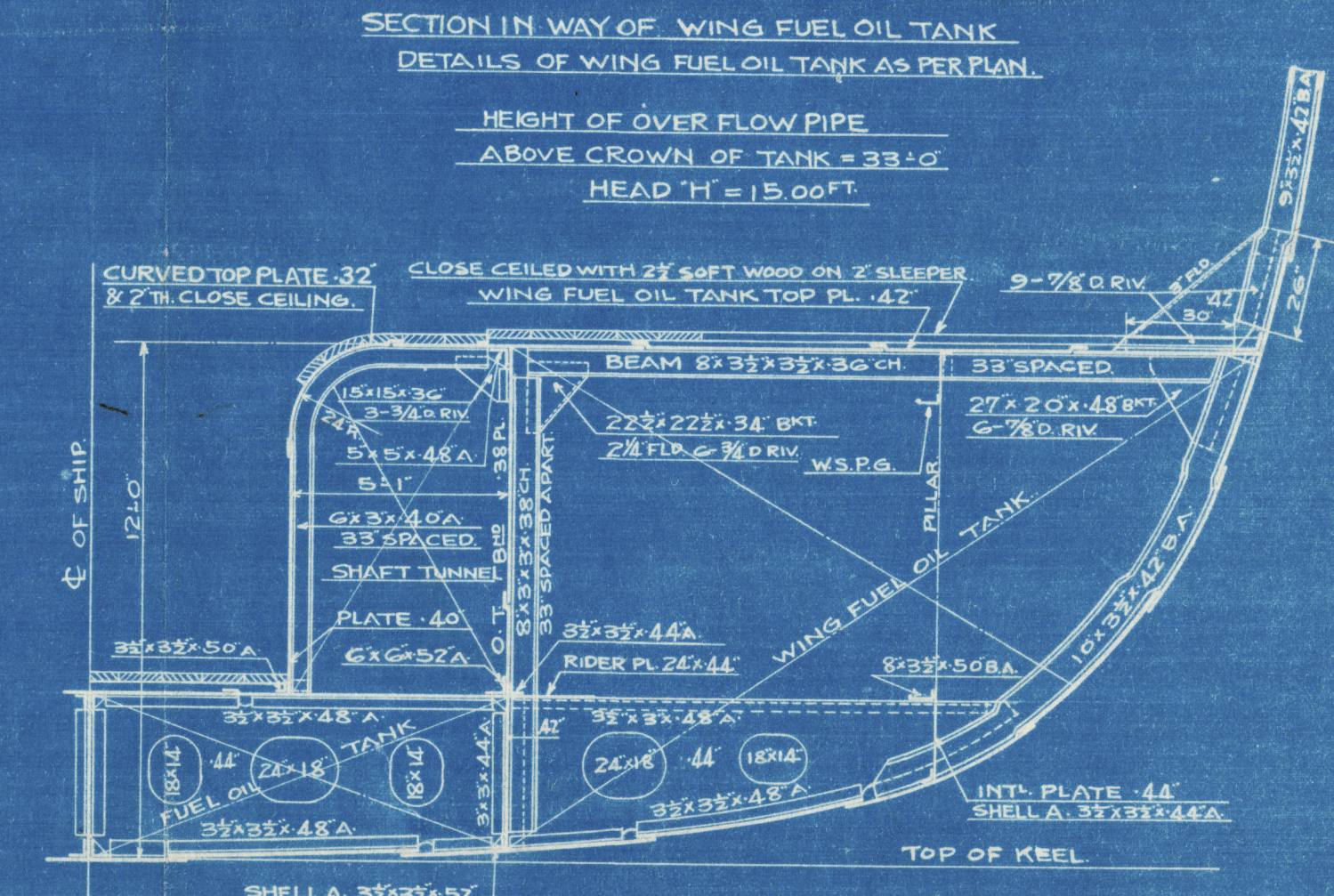
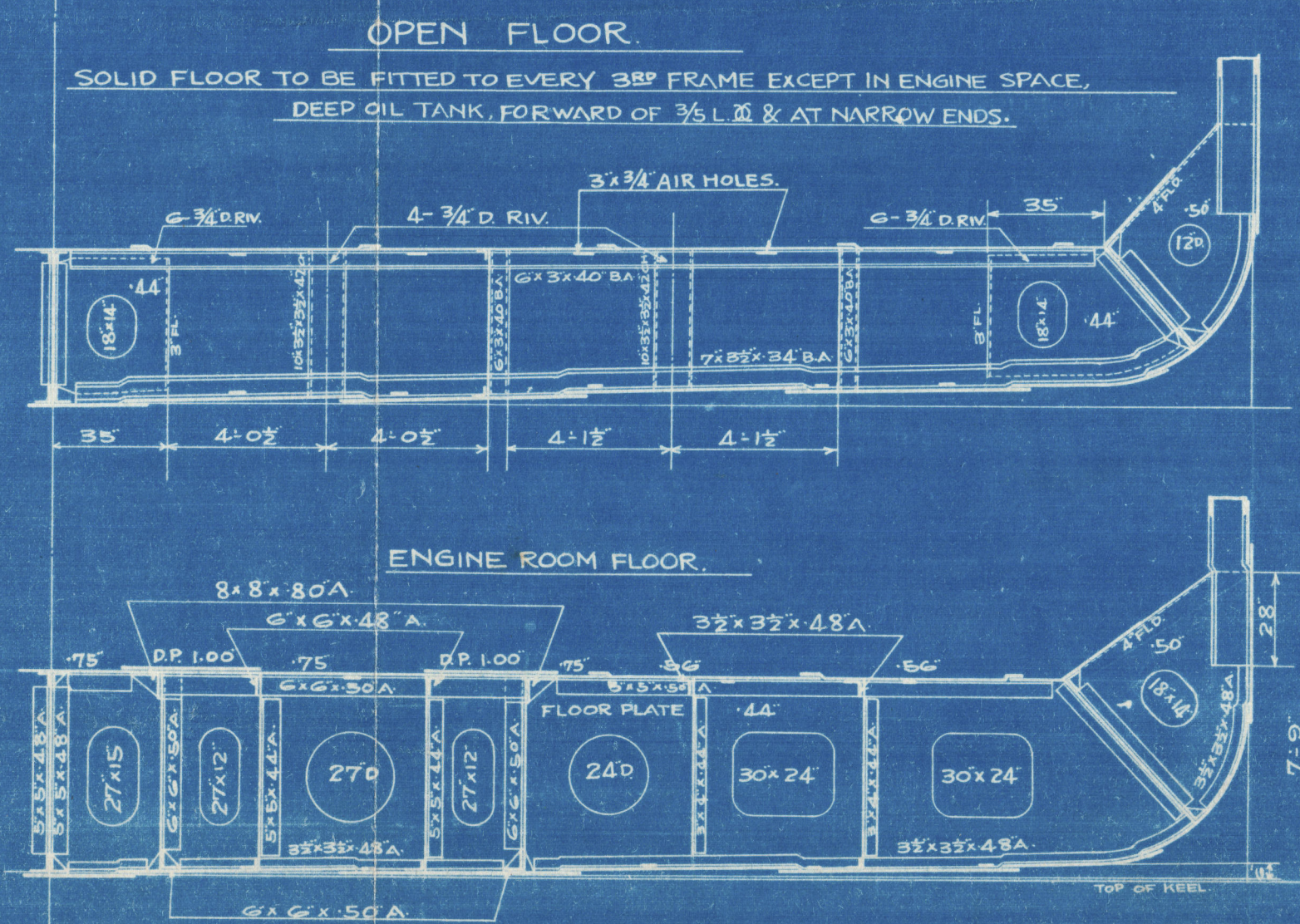
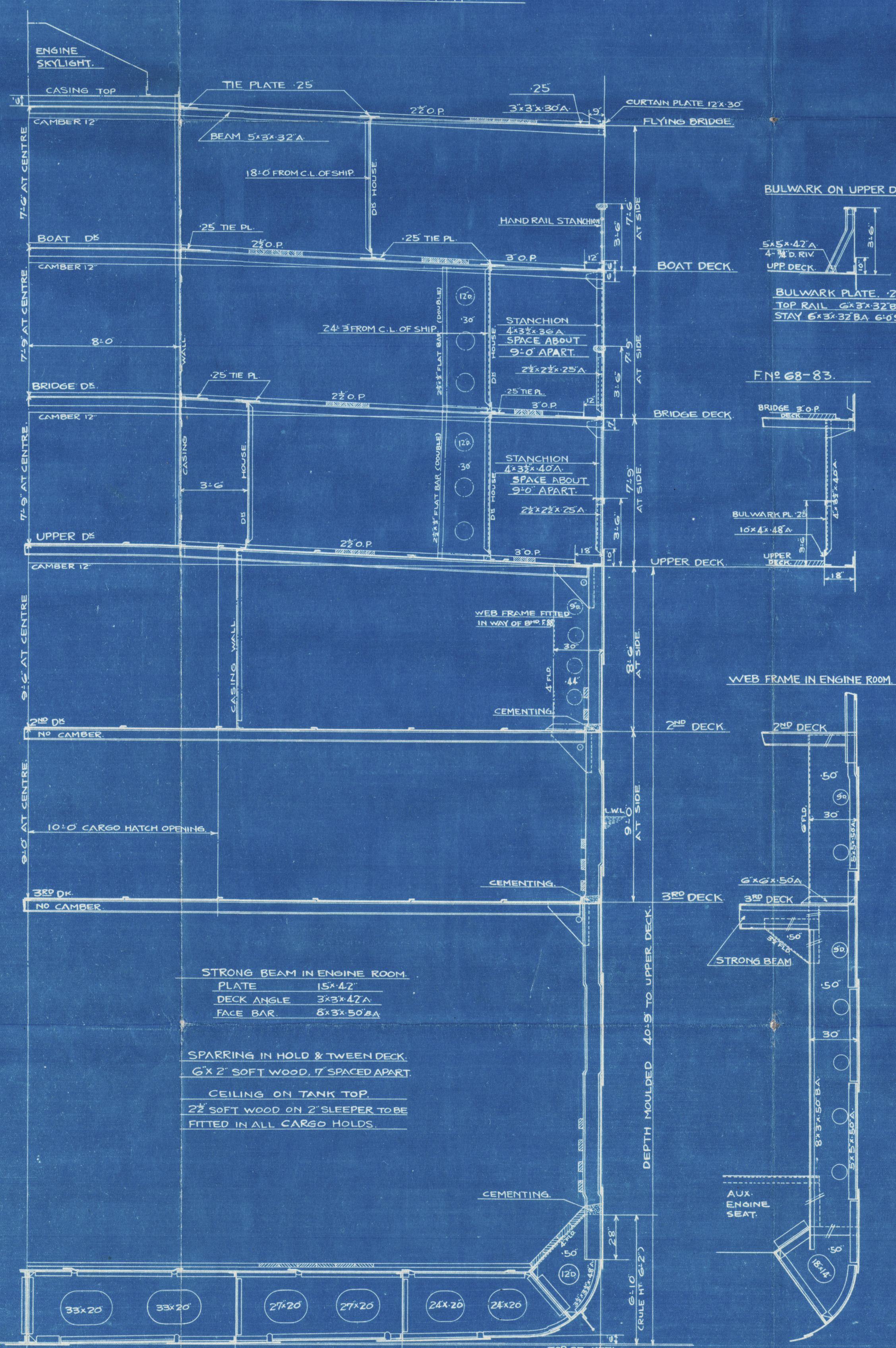
| BILGE KEEL (115' G. AMIDSHIPS) | | | |
|--------------------------------|--|-------------|--|
| BULB PLATE | | 10 1/2 x 50 | |
| CONNECTING BAR | | 5 x 5 x 50A | |
| DEPTH OF GIRDER | | 13 | |

| DOUBLE BOTTOM | | | |
|---------------|--------------------------------|---------------------|-------------------------------|
| | 1/2 L. @ ENDS | ENGINE SPACE | REMARKS |
| CENTRE GIRDER | PLATE 46 x 62 ~ 48 | 60 x 62 | |
| | KEEL ANGLE 5 x 5 x 60A | 5 x 5 x 60A | |
| | TOP 3 1/2 x 3 1/2 x 52A | 3 1/2 x 3 1/2 x 52A | |
| | VERT. 3 1/2 x 3 1/2 x 48A | 5 x 5 x 48A | UNDER THRUST SEATING |
| SIDE GIRDER | PLATE 44 | 44 | |
| | TOP ANGLE 3 1/2 x 3 1/2 x 48A | 3 1/2 x 3 1/2 x 48A | UNDER THRUST SEATING |
| | BOTTOM 3 1/2 x 3 1/2 x 48A | 3 1/2 x 3 1/2 x 48A | |
| | VERT. 3 1/2 x 3 1/2 x 42A | 3 1/2 x 3 1/2 x 42A | |
| SOLID FLOOR | PLATE 44 | 44 | |
| | FRAME 3 1/2 x 3 1/2 x 48A | 3 1/2 x 3 1/2 x 48A | 5 x 5 x 48A FOR 3/4 L. @ ENDS |
| | REV. FRAME 3 1/2 x 3 1/2 x 50A | 6 x 6 x 50A | THRUST SEATING |
| W.T. FLOOR | PLATE 52 | 52 | |
| | BOUNDARY 3 1/2 x 3 1/2 x 52A | 3 1/2 x 3 1/2 x 52A | |
| | STIFFENER 3 1/2 x 3 1/2 x 48A | 3 1/2 x 3 1/2 x 48A | SPACED 30" APART |
| INNER BOTTOM | ML STRAKE 56 x 56 ~ 46 | 75 | |
| | OTHER 48 ~ 42 | 56 | |
| | MARGIN PL. 40 x 56 | 56 | |
| | TOP SHELL 55 x 56A | 5 x 5 x 56A | |

(DETAILS OF SCANTLING UNDER MAIN ENGINE SEATING AS PER SKETCHES)
NB 7 TANK TOP PLATES FITTED TRANSVERSELY IN WAY OF BULKHEAD EXCEPT MARGIN PLATE & MIDDLE LINE STRAKE.

STRENGTHENING OF BOTTOM FORWARD
FROM FORWARD OF 3/4 L. @ COLLISION BULKHEAD
PITCH OF RIVET IN FRAME TO BE 55" (TWO COMPLETE ROWS ON BOTH FLANGES). FRAME ANGLE 5 x 5 x 48 FROM MARGIN PLATE TO MARGIN PLATE.
INT'L ADDITIONAL SIDE GIRDER TO BE FITTED AT 4'0" APART & 2" HT. GIRDER EXTENDING AS FAR FORWARD AS PRACTICABLE.
FLOOR PLATE OR INT'L SIDE GIRDERS ARE NOT TO BE FLANGED.
SHELL PLATING, THREE STRAKES NEXT THE KEEL TO HAVE MIDSHIP THICKNESS .67" MAINTAINED (FORWARD TO COLLISION BULB)

| RIVETING NOTE (EDGE CONNECTION) | | | |
|---------------------------------|----------|---------|--|
| KEEL PLATE | 2R | | |
| BOTTOM PLATE | 2R | | |
| SIDE PLATE | | | |
| SHEER STRAKE | | | |
| BELOW STRAKE | 2R | 2R | |
| FILE SIDE PL. | | 1R | |
| ML STRAKE | 2R | 2R | |
| OTHER | | | |
| MARGIN PLATE | 2R | 2R | |
| UP. DECK STRINGER PL. | 1R | 1R | |
| " " PLATE | | | |
| ALL OTHER DS PL. | 1R | 1R | |
| | 1/2 L. @ | AT ENDS | |



| DECKS | | | |
|-------------------|---------------------------|---------------------------|-------------|
| | BOAT DECK | BRIDGE DECK | FILE DECK |
| STRINGER PLATE | 27 x 30 | 30 x 32 | 34 x 34 |
| ANGLE | 3 x 3 x 30A | 3 x 3 x 32A | 3 x 3 x 34A |
| SHELL ANGLE | | | |
| G. WATERWAY ANGLE | FLAT BAR .46 WELDED | | |
| DS PLATE | .25 TIE PLATE | .25 TIE PLATE | .36 |
| CURTAIN PLATE | 12 x 30 | BULWARK PL. .25 | |
| WOOD PLANK | 2 1/2" x 30" INSIDE HOUSE | 2 1/2" x 30" INSIDE HOUSE | |

| TANK SIDE BRACKETS | | | |
|-----------------------------|-------------------|-----------------|--------------------------|
| PLATE | NE. 45 DEG. HOLDS | ENGINE ROOM | 15% FROM STEM ELSE WHERE |
| GUSSET PLATE | | CONTINUOUS | CONTINUOUS |
| TO FRAME | | 15-7/8" D. RIV. | 15-7/8" D. RIV. |
| TO GUSSET | | 6-7/8" D. RIV. | 8-7/8" D. RIV. |
| TO MARGIN PLATE | | 15-7/8" D. RIV. | 15-7/8" D. RIV. |
| V. ANGLE ON MARGIN PL. | | 5 x 5 x 48A | 5 x 5 x 48A |
| " " ON FLOOR PL. | | 5 x 5 x 48A | 5 x 5 x 48A |
| GUSSET PLATE | | .50 | .48 |
| NO. OF RIV. IN WAY TO FRAME | | 22-7/8" D. RIV. | 22-7/8" D. RIV. |
| OF TANK TOP PLATE TO TOP | | 20-7/8" D. RIV. | 20-7/8" D. RIV. |

| FRAMINGS | | | |
|---------------------|--|----|--|
| FRAME SPACE | | | |
| BOTH PEAKS | | 24 | |
| FORWARD OF 3/4 L. @ | | 27 | |
| ELSE WHERE | | 33 | |

| FRAMING DEPTH (d) | | | |
|-----------------------|------------|---------------|--|
| | ACTUAL (d) | CORRECTED (d) | |
| IN WAY OF ENGINE ROOM | 18'3" | 18'0" | |
| " " HOLD | 19'5" | 19'1" | |
| " " WING F.O. TANK | 8'2" | 19'4" | |
| " " DEEP FRAME SYSTEM | 23'0" | 23'0" | |

| RIVETING NOTE (END CONNECTION) | | | |
|--------------------------------|-------------|-------------|----|
| | 1/2 L. @ | AT ENDS | |
| KEEL PLATE | LAPPED & 4R | LAPPED & 3R | |
| BOTTOM | | 4R | 3R |
| SIDE | | 3R | 3R |
| SHEER STRAKE | | 4R | 3R |
| BELOW | | 4R | 3R |
| FILE SIDE PLATE | | | 1R |
| INNER BOTTOM | | | |
| ML STRAKE | LAPPED & 3R | LAPPED & 2R | |
| OTHER | 1/2 L. @ | 2R | |
| MARGIN PLATE | | 3R | |
| CENTRE GIRDER | | 4R | 3R |
| UPPER DECK STRINGER PL. | 4R UP | 4R | 3R |
| " " PLATE | 4R UP | 4R | 3R |
| 2ND DECK STRINGER PL. | | 3R | 2R |
| " " PLATE | | 2R | 1R |
| 3RD DECK STRINGER PL. | | 1R | 1R |
| " " PLATE | | 1R | 1R |
| FILE DECK STRINGER PL. | | | 1R |
| " " PLATE | | | 1R |
| BRIDGE DECK STRINGER PL. | LAPPED & 1R | | |
| " " PLATE | | 1R | |
| BOAT DECK STRINGER PL. | | 1R | |
| " " PLATE | | 1R | |

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MIDSHIP SECTION.
SCALE 1/4" INCH TO 1 FOOT.
(44.5' x 60' x 6' x 40' 9")
(FINISHED PLAN)

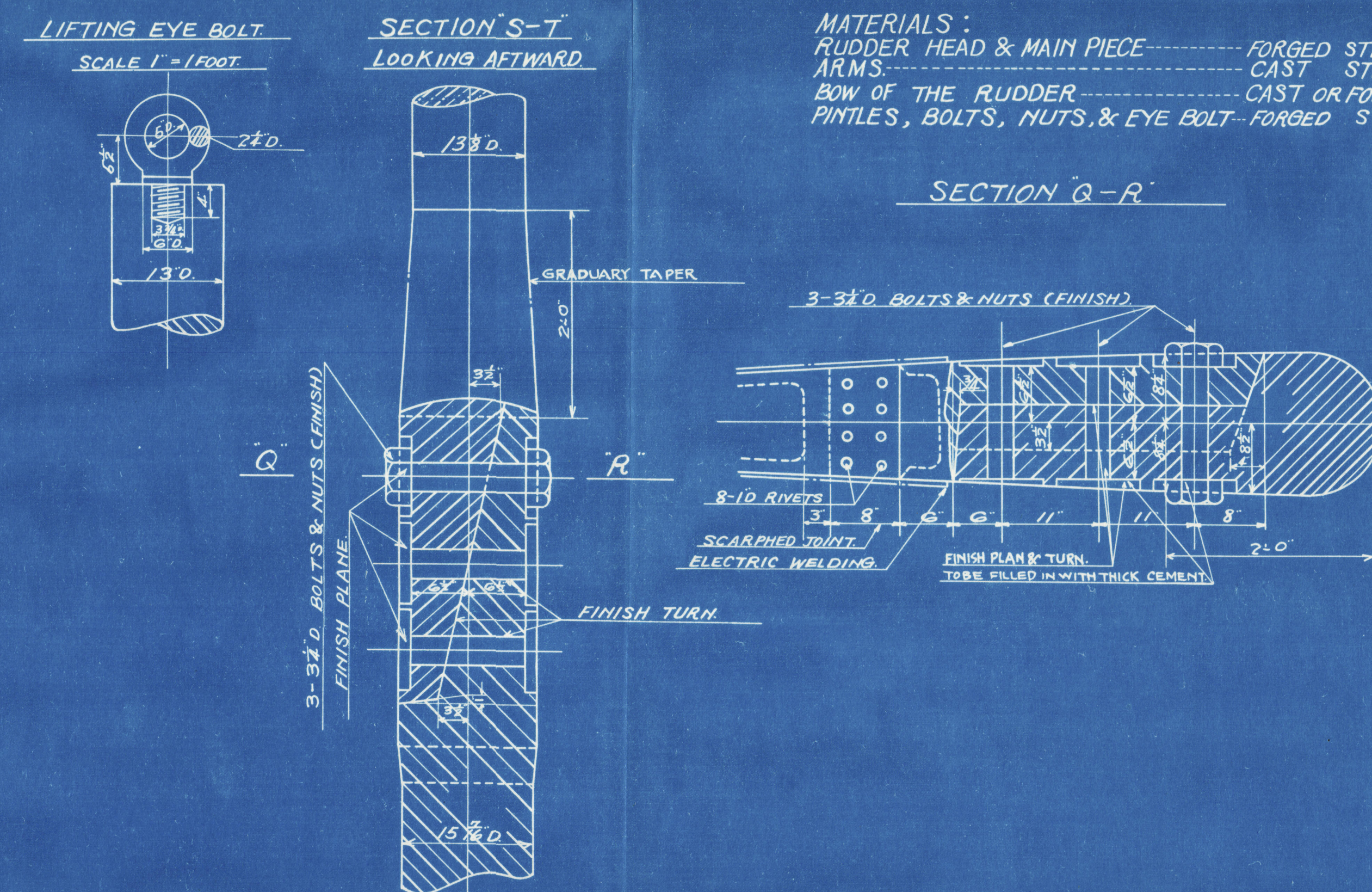


1. ALL RIVETS & TAP RIVETS TO BE $\frac{7}{8}$ INCH DIA. EXCEPT THOSE OTHERWISE SPECIFIED.
2. INSIDE RUDDER SPACE TO BE PACKED WITH GRANULATED CORK MIXED WITH BITUMEN EXCEPT PINTLE COVERING PART, WHERE NO PACKING.
3. ALL BOLTS & NUTS TO BE WHITWORTH STANDARD SIZE.

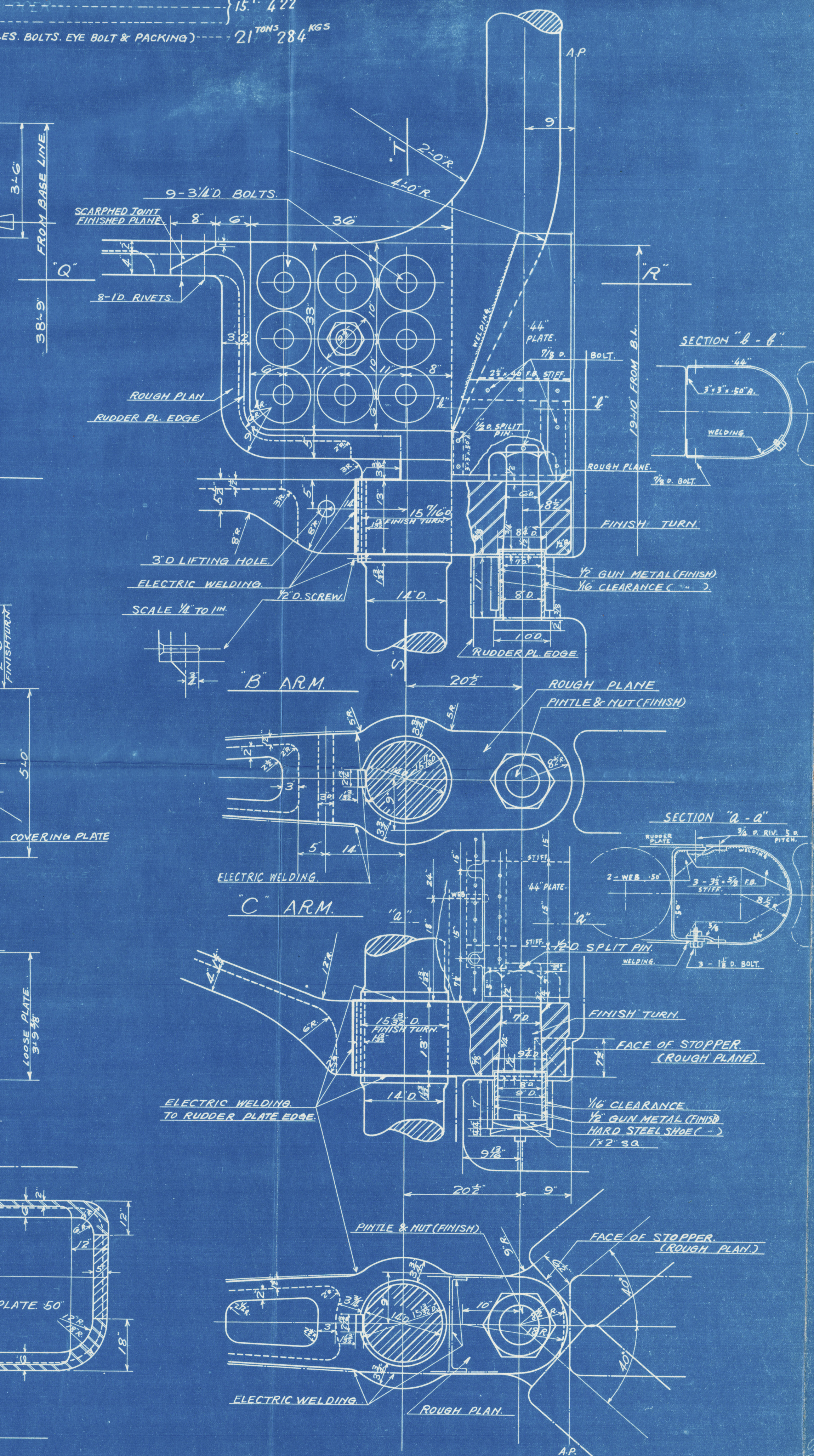
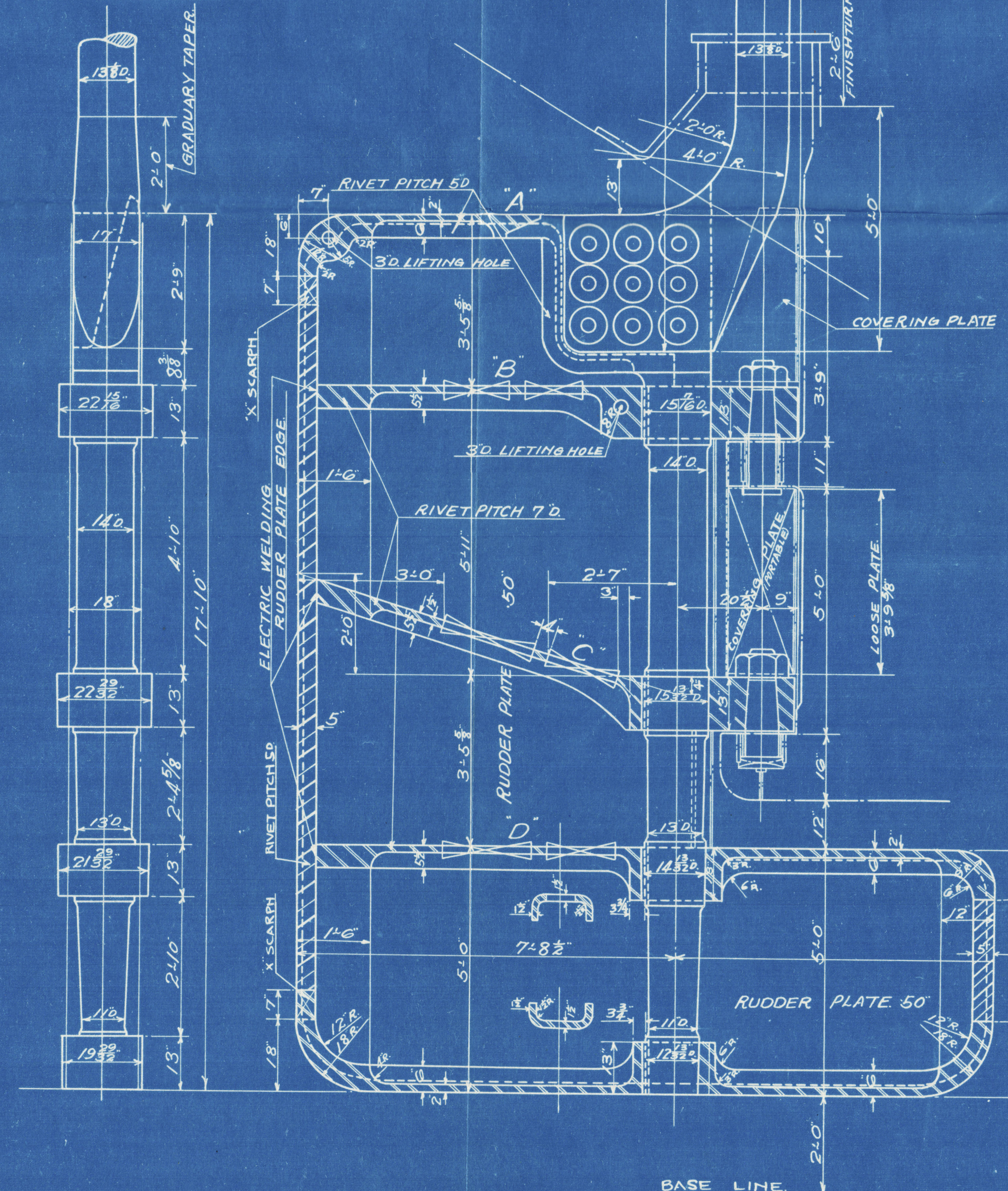
MATERIALS:
 RUDDER HEAD & MAIN PIECE----- FORGED STEEL.
 ARMS----- CAST STEEL.
 BOW OF THE RUDDER----- CAST OR FORGED S^t.
 PINTLES, BOLTS, NUTS, & EYE BOLT--- FORGED STEEL.

| | |
|---|----------------------------|
| WEIGHT : | |
| RUDDER HEAD----- | 5 ^T . 878 KGS. |
| MAIN PIECE & ARMS (A,B,C,D,E.)----- | |
| PACKING----- | 15 ^T . 422 " |
| PLATES----- | |
| TOTAL (INCL. PINTLES, BOLTS, EYE BOLT & PACKING)----- | 21 ^{TONS} 284 KGS |

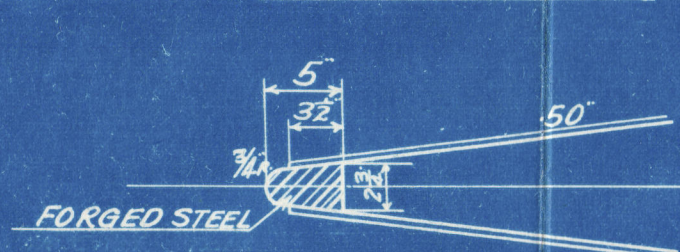
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| RUDDER PARTICULARS:— | |
| SEA SPEED | 14 $\frac{3}{4}$ KNOTS. |
| TOTAL RUDDER AREA | 185.3 |
| RUDDER AREA EXCLUDING BALANCED PART & PINTLE COVERING LOOSE PART. | |
| (A) | 147.18. |
| A x D | 773.50 |
| DIA. OF RUDDER HEAD. | 13 D. |



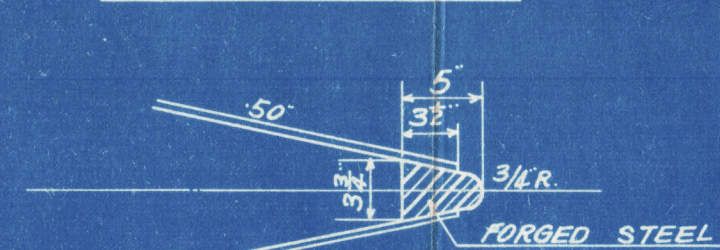
FORE END VIEW OF THE RUDDER.
LOOKING AFTWARD.



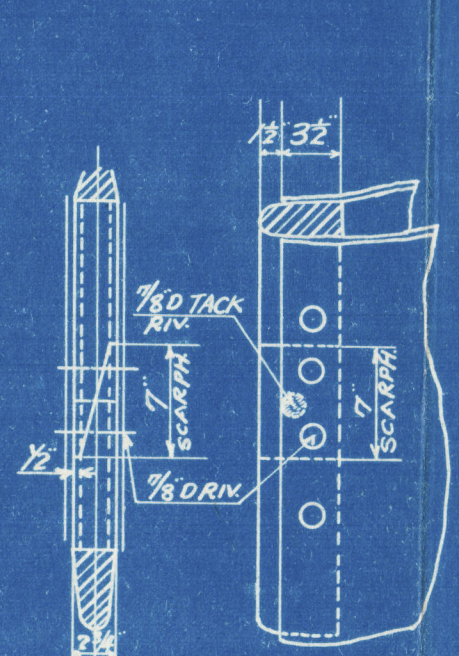
RUDDER AFT END
SCALE 1" TO 1 FOOT.



RUDDER FORE END
SCALE 1" TO 1 FOOT.



"X" SCAPH JOINT.
SCALE 1" TO 1 FOOT



M.V. "EINAI MARU".

Nagasaki Report No.1737.

RUDDER
SCALE 1/2 INCH TO 1 FOOT.
(DETAILS) 1 INCH TO 1 FOOT.
(445-0°-60-6°-40-9°)
(FINISHED PLAN)

